
Space Weather Forecast

Issued on Wednesday, 02 March 2022 at 12:56 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales <https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales>

Space Weather Forecast Headline: Chance of G1 Minor Geomagnetic Storms days 2-4. Increasing Slight Chance of R1 Minor Radio Blackouts.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity was Low in the last 24 hours, with two common class flares recorded. There are currently five numbered sunspot regions and one unnumbered region on the visible disc. Those in the western solar hemisphere comprise two single mature, stable, uni-polar sunspot regions, along with a small and weakening bi-polar group. The eastern solar hemisphere contains three bi-polar groups, the largest and more magnetically complex region in the southeast quadrant, next to the small new region, and a smaller and weakening, bi-polar group in the northeast.

No Earth directed CMEs (coronal mass ejections) have been observed.

Solar Wind / Geomagnetic Activity: The solar wind speed was at slightly elevated to elevated levels, although the number of particles and their associated magnetic field were within normal background. Geomagnetic activity was Quiet (Kp 1 to 2).

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to be Low, but with a Slight Chance of isolated Moderate-class flares. Chances may continue to increase later in the period as the potential returning regions transit around the eastern limb.

Solar Wind / Geomagnetic Activity: No Earth-directed CMEs currently feature in the forecast. Geomagnetic activity is expected to be Quiet with a chance of Unsettled and a Slight Chance of isolated Active intervals. Late on day 2 or on days 3 and 4 (03-05 March), Unsettled to Active geomagnetic activity is likely, with a chance of G1/Minor Storm intervals due coronal hole effects.

Energetic Particles / Solar Radiation: No solar radiation storms are expected.

Geomagnetic Storms:

Geo-Magnetic Storm	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Minor or Moderate	G1 to G2	No	1	40	40	30
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability			(%)	(%)	(%)	(%)
Active	R1-R2 M Class	No	20	25	25	25
Very Active	R3 to R5 X	No	2	2	2	2

Solar Radiation Storms - (High Energy Protons):

Radiation Storms	Level (cm ⁻² sr ⁻¹ s ⁻¹)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = cm⁻²sr⁻¹s⁻¹)